



UNIVERSITY OF LIVERPOOL



POSTDOCTORAL RESEARCH ASSOCIATE

Job Ref: 006744



Faculty: Health and Life Sciences, Institute of Integrative Biology

Location: University Campus

Grade: 7

Salary: Depending on qualifications and experience

Range: £32,958 - £34,956 pa

Tenure: 2 years commencing as soon as possible

Hours of work: Full - Time

Closing Date: 11 April 2017

Interview Date: To be confirmed

Informal enquiries to Professor Samar Hasnain, email: s.s.hasnain@liverpool.ac.uk



The Post

You will join the Molecular Biophysics Group (www.biophysics.liv.ac.uk) to work on a BBSRC-supported project on structure-function-mechanism studies of Cu-nitrite reductase and membrane bound nitric oxide reductase and the role of metabolon complex formation in controlling levels of cytotoxic NO. The project will link crystallographic studies with techniques to probe factors that control delivery of electrons and protons to the active site of these enzymes. You will be responsible for using established molecular biology procedures underpinning the overexpression and purification of a number of enzymes and their mutants including membrane proteins and undertake crystallographic, spectroscopic and mechanistic aspects of the programme. You will spend two periods of up to 2 weeks in the RIKEN laboratories in Japan as part of a collaborative programme alongside two PhD students working on membrane-bound nitric oxide reductases.

You should have a PhD in a relevant area preferably with experience in protein crystallography and practical knowledge of molecular biology and membrane protein purification. The post is available until 31 March 2019. Excellent verbal and written communication skills are required.

References

- Structures of protein-protein complexes involved in electron transfer. Antonyuk, S. V., Han, C., Eady, R. R. & Hasnain, S. S. (2013) **Nature (Lond.)** **493**, 123-127.
- Characterisation of a novel copperheme c dissimilatory nitrite reductase from *Ralstonia pickettii*. Han, C., Wright, G. S. A., Fisher, K., Rigby, S. E. J., Eady, R. R. & Hasnain, S. S. (2012) **Biochem J.** **444**, 219-26.
- Structural Basis of Biological N₂O Generation by Bacterial Nitric Oxide Reductase Hino, T., Matsumoto, Y., Nagano, S., Sugimoto H., Fukumori, Y., Murata, T., Iwata, S. & Shiro. Y. (2010) **Science** **330**, 1666-1670.
- Crystal Structure of Quinol-Dependent Nitric Oxide Reductase from *Geobacillus Stearothermophilus* Matsumoto, Y., Tosha T., Pisljakov, A. V., Hino, T., Sugimoto, H., Nagano, S. Sugita, Y. & Shiro Y. (2012) **Nat. Strl. Mol. Biol.** **19**, 238-245
- Nitrous Oxide Reductase. Eady, R. R., Antonyuk, S. V. & Hasnain, S. S. (2011) **In Handbook of Metalloproteins** Vol. 4 & 5, (Messerschmidt, A. ed.). John Wiley & Sons Chichester, UK, pp. 600-614.
- Mechanism of proton coupled electron transfer in the catalytic cycle of *Alcaligenes xylosoxidans* copper-dependent nitrite reductase. Leferinck, N. G. H., Han, C., Antonyuk, S. V., Rigby, S. E. J., Hough M. A., Eady, R. R., Scrutton, N. S. & Hasnain, S. S. (2011) **Biochemistry**, **50**, 4121-4131.
- Demonstration of proton-coupled electron transfer in the copper-containing nitrite reductases. Brenner, S., Heyes, D. J., Hay, S., Hough, M. A., Eady R. R, Hasnain S. S & Scrutton, N. S. (2009) **J. Biol. Chem.** **284**, 25973-25938.



Person Specification

ESSENTIAL CRITERIA

DESIRABLE CRITERIA

(Identified from – Application form, CV, Supporting Statement, Interview, References)

EXPERIENCE

1.	Experience of protein crystallisation, protein production and purification, molecular biology	EPR spectroscopy
2.	Experience of laboratory research in an academic environment	Fast kinetic measurements
3.	Protein X-ray Crystallography	

EDUCATION, QUALIFICATIONS AND TRAINING

1.	PhD in the area of physics, chemistry, biological sciences or biophysics	Crystallography or Enzymology
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SKILLS, GENERAL AND SPECIAL KNOWLEDGE

1.	Good laboratory practice and skills	Synchrotron data collection and processing
2.	Excellent skills in scientific writing and a history of delivering oral presentation at national/international meetings	Experience with membrane proteins
3.	Excellent interpersonal and communication skills, both written and verbal	Biochemistry and crystallography
4.	Excellent time management and organisational skills	
5.	Excellent communication and interpersonal skills	

PERSONAL ATTRIBUTES AND CIRCUMSTANCES

1.	Highly motivated with ability to work independently	
2.	Consistent ability to produce high quality/quantity of work	
3.	Dependable, reliable and self-motivated	
4.	Excellent attention to detail	
5.	Able to work independently and willing to work in a team environment and contribute to the development and growth of the research team	
6.	Willingness to travel for data collection as well as positive engagement with international collaborators	



Faculty of Health and Life Sciences

The Academic structure of the University consists of three faculties: Humanities and Social Sciences; Science and Engineering; and Health and Life Sciences. The Faculties effectively support the achievement of the University's Strategic Plan priorities by enabling better support for and facilitation of academic endeavour and collaboration through an enhanced capacity to respond to cross-disciplinary research challenges and with greater devolution of decision making and budgetary control.

The University of Liverpool has been at the forefront of Health & Life Sciences research for 130 years and continues to build on the impressive research knowledge, experience, resources and partnerships that have been amassed. The Faculty has over 1,850 staff, 5,000 undergraduates and 1,000 postgraduate students who, together with many alumni and partners, are helping to build the University's reputation every day.

The Faculty has eight Institutes:

- Ageing and Chronic Disease (IACD)
- Clinical Sciences (ICS)
- Infection and Global Health (IIGH)
- Integrative Biology (IIB)
- Life and Human Sciences (ILHS)
- Psychology, Health and Society (IPHS)
- Translational Medicine (ITM)
- Veterinary Science (IVS)

The Institutes enhance collaboration and foster interdisciplinary alliances, allow better integration of related research activities and increase the critical mass focusing on areas of research with high impact and those requiring cross-disciplinary arrangements. They also provide for greater devolution of decision making and budgetary control. A central element of this is a closer alignment between the academic structure and the Professional Services, ensuring the required levels of support and expertise are in place at the appropriate levels within the structure.

Institute of Integrative Biology

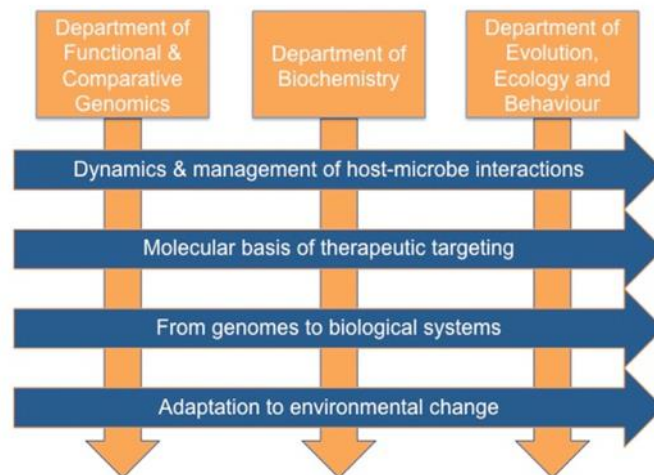
The Institute of Integrative Biology (IIB) is one of the 5 research-focused Institutes within the Faculty of Health and Life Sciences, the others being thematically focused on medical and veterinary clinical issues (<http://www.liv.ac.uk/health-and-life-sciences/research/index.htm>).

The Institute currently consists of 72 academic staff including 25 Professors and 3 independent Research Fellows. There are 100 staff on fixed term research contracts, ~100 postgraduate students and 28 technical staff. It is administered by 18 clerical/admin staff providing management, financial, planning and clerical support to academic staff.

Research spans the complete range of biological scales from genes and genetic regulation through proteins, post-translational modification and cellular function to whole organisms, populations and ecosystems. We use state-of-the-art "omics" technologies to generate large data-sets both within and across these scales and we develop new mathematical and computational models to make sure we can fully exploit these data.



The Institute is organised into 3 Departments with 4 cross cutting research themes:



Particular emphasis is placed on breaking down disciplinary barriers and on encouraging the development of thematic networks of active research groups, both within the IIB but also extending externally into chemistry, physics, computer science and maths on one hand, and to clinical science, diagnostics and healthcare on the other.

The Institute has [Athena Swan Silver](#) status for its commitment to supporting its staff in reaching their full potential, by providing a fair and supportive working environment and organisational structure. Further details are available on the Institute's [Athena Swan](#) web page.



A World Class University



The University of Liverpool is one of the UK's leading research institutions with an annual turnover of £480 million, including £133 million for research. Liverpool is ranked in the top 1% of higher education institutions worldwide and is a member of the prestigious Russell Group, comprising the leading research universities in the UK.

As an international institution, we have 31,000 students and 195,000 alumni in 200 countries. Our global focus has led us to establish a university in the World Heritage city of Suzhou near Shanghai, in partnership with Xi'an Jiaotong University – a top 10 university in China. Liverpool is popular with students from all over the world, with 7,700 international students from all over the world studying at the University. We are also the largest provider of 100% online postgraduate degree courses in Europe with some 10,000 students studying for University of Liverpool degrees around the world.

Associated with no fewer than nine Nobel Laureates, we are recognised for our high-quality teaching and research. In the UK Government's most recent research assessment exercise, a total of 81% of the University's research staff were ranked in the highest categories of 4* (world-leading) and 3* (internationally excellent) for their research.

Addressing some of the world's toughest challenges, our research is helping to transform lives. Here you can work with us to conduct research that has a positive impact on people and the planet, to share ideas with peers, with business and beyond, to further widen your world view within our international network of academic partners and to prepare to be a true global citizen. Here at the University, we can help you to make a real difference to the wider world.

The University continues to strengthen key aspects of the student experience, investing £600 million in its teaching, research and residential estate over a 10-year period including £250 million in high quality accommodation and £350 million in the city centre campus and at the Veterinary Science site at Leahurst on the Wirral.

Life Changing, World Shaping



The City of Liverpool



As the fourth largest city in the UK, Liverpool is diverse, energetic and exciting. Built on an illustrious heritage that stretches back 800 years, Liverpool has a global reputation for sport, music, architecture and culture.

Today the city is enjoying a resurgence, driven by its designation as European Capital of Culture in 2008. Record levels of inward investment have transformed the city.

The regeneration of Liverpool City Centre has been spearheaded by the £1 billion Liverpool One project - one of Europe's biggest shopping/mixed-use schemes, which has positioned the city as one of the UK's top five retail destinations.

The successful European Capital of Culture experience in 2008 has been followed by the designation of Liverpool's stunning waterfront as a UNESCO World Heritage Site and massive investment in new cultural and leisure attractions, including Albert Dock. Liverpool is a major cultural hub in the UK. In fact, there are more museums, theatres, and galleries in Merseyside than in any other region outside London.

Liverpool Philharmonic Hall, home to the Royal Liverpool Philharmonic Orchestra, one of Europe's leading orchestras, is the classical counterpoint to the city's many contemporary music venues and the visually stunning Echo Arena.

Home to two of Europe's most famous football teams - Liverpool FC and Everton FC- the city's achievements in sport are internationally recognised. Aintree Racecourse, home of the Grand National, and two internationally acclaimed golf courses at Royal Birkdale & Royal Liverpool in Hoylake are on the doorstep.

Compared to many other UK cities Liverpool has less congestion, is closer to countryside, has more parks, has more cultural and recreational opportunities, better schools and more accessible transport. Liverpool is uniquely situated 1 hour from Manchester, 3 hours from London by train and the city's Liverpool John Lennon Airport (one of the Europe's fastest growing airports) connects to more than 650 world wide destinations.

For more information on the city of Liverpool, visit: www.itsliverpool.com



Application Process



How to apply

Applications should comprise:

- A completed Applicant Information Form
- A copy of your full curriculum vitae
- A statement indicating the reasons for applying for this post and how your training and experience is relevant

If you have any particular requirements should you be invited to interview, please make this clear in your application.

Shortlisting and Interviewing

Shortlisting and interview arrangements are the responsibility of the recruiting Department. Please contact **Professor Samar Hasnain** on 0151 795 5149, email: s.s.hasnain@liverpool.ac.uk for enquiries after the closing date.



General Information

Asylum & Immigration

The University will comply with the Immigration, Asylum and Nationality Act 2006, which requires all employees to provide documentary evidence of their legal right to work in this country prior to commencing employment. Please be aware that you will be required to bring your passport (and visa if applicable) to interview so that it can be copied and verified by a member of the Selection Panel. For posts requiring a recognised degree level or equivalent qualification, and where there is no suitable UK or European Economic Area candidate, the University will take the necessary steps to secure UK Border Agency permission for a foreign national to take up employment.

Should a candidate require a Certificate of Sponsorship in order to take up a post they will need to meet the UK Border Agency Tier 2 Points Based Criteria. A self assessment tool can be found on the UK Border Agency website at: www.ukba.homeoffice.gov.uk/pointscalculator

A candidate may also be required to undertake an English Language test prior to commencing work at the University. Details of Home Office approved tests can be found at: <https://www.gov.uk/government/publications/guidance-on-applying-for-uk-visa-approved-english-language-tests>

Further information on the eligibility criteria for Certificates of Sponsorship can be found at: www.ukba.homeoffice.gov.uk/employers/points

National Insurance Number

All employed individuals must possess a UK National Insurance Number. Further information and how to apply for a unique National Insurance Number can be found at: <https://www.gov.uk/apply-national-insurance-number>

Diversity and Equality

The University of Liverpool is committed to diversity and equality of opportunity. All employees and applicants for jobs will be considered on their abilities and will not be discriminated against on the grounds of age, caring responsibilities, colour, disability, employment status, gender, gender identity, marital status, nationality, race or ethnic origin, religion or belief, sexual orientation, socio-economic status or any other irrelevant distinction. Training is available to support career progression within the University.

Two Ticks Disability: Guaranteed Interview Scheme (GIS)

The University of Liverpool is committed to the employment of disabled people, and as part of our commitment, we guarantee to interview all disabled applicants who meet the essential criteria for a post and consider them on their abilities. If your disability prevents you completing the application form by the specified closing date, or when the vacancy closes early, due to a high volume of applications, please call the Recruitment Team to discuss alternative arrangements.

<http://www.liv.ac.uk/working/jobvacancies/guaranteedinterviewscheme/>

Volition Programme

The University of Liverpool supports the Liverpool Anglican Cathedral Volition Programme. Applicants who have successfully completed the programme and meet the essential criteria for the post will be offered a guaranteed interview. Please note that individuals will be confirmed through the Volition Programme directly.

<http://www.liv.ac.uk/working/jobvacancies/volitionprogramme/>

GiveGetGo Volunteer Programme

Applicants who have successfully completed the GiveGetGo Volunteer Programme at the University in Partnership with the Transform Lives Company who meet the essential criteria for the post will be offered a guaranteed interview. Please note that individuals will be confirmed through the GiveGetGo Volunteer Programme directly.

<https://www.liverpool.ac.uk/working/jobvacancies/givegetgo/>

Accessibility

If you require copies of documentation in alternative formats, for example, large print or Braille, please contact jobs@liverpool.ac.uk or telephone 0151 794 6771.

If you have any other requirements which will help you access the application or interview process or employment opportunities at the University of Liverpool, please let us know by contacting jobs@liverpool.ac.uk or telephone 0151 794 6771.

Pension

The Occupational Pension Scheme associated with this appointment is the Universities Superannuation Scheme (USS). You are encouraged to familiarise yourself with the full particulars of the scheme which can be found [here](#)

